National Weather Service
Storm Data and Unusual Weather Phenomena

February 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

WIZ046>047-051>052-056>060-062>072 **Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

03 0000CST 2359CST 0 0 Winter Weather/Mix

Periodic light freezing drizzle or light freezing rain glazed roads and sidewalks across south-central and southeast Wisconsin, resulting in an estimated 150 to 200 vehicle accidents, ranging from simple collisions to slide-offs into ditches or collisions with large objects. Most accidents occurred during the morning rush hour. Dozens of schools started late or cancelled classes for the day. In addition, some taxi-cab businesses closed due to the icy roads and numerous accidents. During the afternoon hours, the freezing precipitation changed over to snow which accumulated to 1/2 to 2 inches, although isolated 3 to 4 inch amounts were measured around La Valle (northwest corner of Sauk Co.), and in Marquette County.

WIZ063>066 **Dane - Jefferson - Waukesha - Milwaukee**

11 1500CST 2000CST 0 0 Winter Storm

The first winter storm of the 2002-03 season, to affect parts of south-central and southeast Wisconsin, was centered in a 25-mile wide corridor from the Madison (Dane Co.) area east to the Milwaukee (Milwaukee Co.) area. A 2 to 2.5 hour burst of snow accumulating to 4 to 7 inches was followed by west to northwest winds gusting to 30 to 43 kts (35 to 50 mph). These wind gusts resulted in blowing and drifting snow which lowered visibilities down to 1/4 mile or less in open, exposed areas (after the snow had stopped). Outside of the winter storm area, an isolated peak gust of 49 kts (56 mph) occurred at the Monroe Airport (Green Co.). Lightning and thunder were observed during the peak snowfall rates, with snowflakes reported to be at least 1 inch in diameter, and visibilities reduced to 1/4 mile or less. Due to the timing and intensity of this event, the impact on society was significant. Commuting times were doubled or tripled, and numerous vehicles accidents were reported in newspapers, as rush-hour traffic slowed to a crawl. Many evening functions and sporting events were cancelled. Milwaukee's Mitchell Field closed its operations for a 2-hour period during the height of the snowfall, the first time it shut down in two years. Snow accumulations in Milwaukee County included 7.0 inches in Hales Corner, 6.7 inches in Franklin, 6.3 inches in Cudahy, 6.2 inches in Greendale, and 5.0 inches at Mitchell Field. In and around the city of Waukesha (Waukesha Co.) accumulations of 5 to 6 inches were reported. In east-central Jefferson County, 5.2 inches were measured at the NWS Forecast Office southeast of Sullivan. In Dane County, 5.1 inches were reported on the southwest side of Madison (spotter report near the intersection of Raymond Rd and Hwy 18/151), 4.9 inches in Sun Prairie, and 4.0 inches at Madison's Truax Field. Maximum wind gusts were 43 kts (49 mph) at a school in Merton (Waukesha Co.), 38 kts (44 mph) at the Madison West High School, and 37 kts (43 mph) at Milwaukee's Mitchell Field. Synoptically, the surface weather map lacked a well-defined low pressure. However, a strong, vigorous vorticity maximum aloft, and its associated frontogenetic forcing, combined with instability to produce bands of convective snow showers

National Weather Service
Storm Data and Unusual Weather Phenomena

March 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

WIZ056>057-062>063 **Sauk - Columbia - Iowa - Dane**

04 **1300CST** **0** **0** **Heavy Snow**
2100CST

A Heavy Snow event affected parts of south-central Wisconsin on March 4th. This was only the 2nd significant winter event of the 2002-03 winter season for this part of the state. Accumulations of 6 to 7 inches were noted in the Wisconsin River Valley of Sauk, Dane, and Iowa Counties through the southern part of Columbia County. Newspapers reported that dozens of vehicle accidents occurred after roads became icy or snow-covered. Luckily, the snow was fluffy and had a low water content, which minimized the impact of the event. Synoptically, a cold front was situated south of Wisconsin while warm air advection and frontogenetic forcing were maximized around 700 mb (10,000 feet AGL) over southern Wisconsin under the right rear quadrant of a jet streak.

WIZ065>066 **Waukesha - Milwaukee**

04 **1500CST** **0** **0** **Heavy Snow**
05 **0800CST**

A Heavy Snow event affected parts of southeast Wisconsin on March 4th and 5th. This was only the 2nd significant winter event of the 2002-03 winter season for this part of the state. Accumulations of 8 to 9 inches were noted across south-central Waukesha County over to the east-central part of Milwaukee County, just south of downtown Milwaukee. Newspapers reported that dozens of vehicle accidents occurred after roads became icy or snow-covered. Luckily, the snow was fluffy and had a low water content, which minimized the impact of the event. Synoptically, a cold front was situated south of Wisconsin while warm air advection and frontogenetic forcing were maximized around 700 mb (10,000 feet AGL) over southern Wisconsin under the right rear quadrant of a jet streak.

WIZ046>047-051>052-056>060-062>072 **Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

20 **0000CST** **0** **0** **Dense Fog**
1000CST

Dense fog developed early on March 20th, and dropped visibilities to 1/4 mile or less. The lowest visibility was 20 to 30 feet in Mequon (Ozaukee Co.). Air traffic was delayed or grounded at both Milwaukee's Mitchell Field (Milwaukee Co.), and Dane County Regional Airport (Madison-Truax Field). Several school districts delayed school openings by 2 hours, and newspapers reported many vehicle accidents. The dense fog was the result of clear skies, a light south-southeast surface wind, and leftover, low-level moisture.

WIZ046>047-056>058-062>064-067>070 **Marquette - Green Lake - Sauk - Columbia - Dodge - Iowa - Dane - Jefferson - Lafayette - Green - Rock - Walworth**

23 **1000CST** **0** **0** **Dense Fog**
1300CST

Dense fog developed early on March 20th, resulting in visibilities lowered to 1/4 mile or less across all of south-central and parts of southeastern Wisconsin. Air traffic was delayed or grounded at Madison's Truax Field (Dane Co.). Some school districts chose to delay the start of classes by 2 hours. Newspapers reported several vehicle accidents

Jefferson County

Ft Atkinson **26** **1230CST** **0** **0** **Dust Devil**
1233CST

A dust devil formed in the city of Fort Atkinson and grew to a height of about 40 to 50 feet. It tore a decorative thermometer off a tree, overturned a lawn ornament, lifted garbage can tops to a height of 40 feet, and deposited a layer of dirt and sand across a residental street.

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Storm Data and Unusual Weather Phenomena

April 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

WIZ046>047-051>052 **Marquette - Green Lake - Fond Du Lac - Sheboygan**

04 **0000CST** **0** **0** **Ice Storm**
2200CST

Periods of freezing rain, initially with some convective showers, resulted in an Ice Storm with ice accumulations of 1/4 to 1/2 inch. sleet and thundersnow were also observed. Toward the end of this event, 1 inch snow accumulations were reported. During the event, northeast winds were gusting to 26 to 30 knots (30 to 35 mph). There were many reports of tree and power line damage, especially in Sheboygan County. Numerous vehicle accidents were noted in newspapers. Two separate rollover accidents resulted in two seriously injured drivers (indirectly-related) in the area northwest of the city of Fond du Lac. Many social events were cancelled, and some schools cancelled classes. Synoptically, low pressure moved east across central Illinois with a warm front ahead of it. Warm, moist, and somewhat unstable air was pulled north up and over a layer of cold air about 3 to 5,000 feet thick over Wisconsin.

WIZ056>060 **Sauk - Columbia - Dodge - Washington - Ozaukee**

04 **1200CST** **0** **0** **Winter Storm**
2200CST

A variety of precipitation types resulted in Winter Storm conditions from Sauk County east to Ozaukee County. Periods of freezing rain, freezing drizzle, sleet, snow, rain showers, and thundersnow were reported. Ice and sleet accumulations were less than 1/4 inch. Toward the end of this event, 1 inch snow accumulations were observed. During the event, northeast winds were gusting to 26 to 30 knots (30 to 35 mph). There were scattered reports of some minor tree and power line damage. Numerous vehicle accidents were noted in newspapers. Many social events were cancelled, and some schools cancelled classes. Synoptically, low pressure moved east across central Illinois with a warm front ahead of it. Warm, moist, and somewhat unstable air was pulled north up and over a layer of cold air about 3 to 5,000 feet thick over Wisconsin.

WIZ063>066-070>072 **Dane - Jefferson - Waukesha - Milwaukee - Walworth - Racine - Kenosha**

04 **1500CST** **0** **0** **Winter Weather/Mix**
2200CST

A mixture of freezing rain, sleet, and snow resulted in a slight galzing of ice and sleet. Ice accumulations were only about 1/8 inch. Toward the end of this event, 1 inch snow accumulations were reported. During the event, northeast winds were gusting to 26 to 30 knots (30 to 35 mph). There were some reports of minor tree and power line damage. Numerous vehicle accidents were noted in newspapers. One driver was critically injured in a vehicle accident near Oregon (Dane Co.). Many social events were cancelled, and some schools cancelled classes. Synoptically, low pressure moved east across central Illinois with a warm front ahead of it. Warm, moist, and somewhat unstable air was pulled north up and over a layer of cold air about 3 to 5,000 feet thick over Wisconsin.

WIZ062>072 **Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

07 **0600CST** **0** **0** **Winter Weather/Mix**
1600CST

A sloppy mix of heavy, wet, snow and some freezing drizzle occurred over southern Wisconsin, resulting in snow accumulations of 2 to 5.5 inches. The freezing drizzle left some crusty layers. The wind were out of the east-northeast, gusting on occasions to 30 to 34 knots (35 to 39 mph). Snow accumulations were greater near the Illinois border: up to 5.5 inches fell in South Wayne (Lafayette Co.) and around 5.0 inches was noted around Bristol (Kenosha Co.). Several social events were cancelled, and some schools cancelled classes. Synoptically, low pressure moved east across central Illinois. Warm air advection between 850 and 700 mb was maximized along the Wisconsin-Illinois border. Dry air in the lower layer of the atmosphere feeding into the low pressure reduced snow amounts to 2 to 4 inches along and north of Interstate 94 between Madison (Dane Co.) and Milwaukee (Milwaukee Co.). Newspapers noted numerous vehicle accidents during the morning commute. Icy roads resulted in one person being killed (indirectly-related) and another critically injured in an accident near Waunakee (Dane Co.) at about 0800CST.

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
WISCONSIN, Southeast									
Dane County									
Verona	**30**	**2000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Green County									
4 NW Jordan	**30**	**2000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Iowa County									
Dodgeville	**30**	**2000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Lafayette County									
4 S Belmont	**30**	**2000CST** **2359CST**			**0**	**0**			**Heavy Rain**

Heavy rains resulting from several rounds of thunderstorms resulted in some minor urban and small stream flooding. About 4 miles south of Belmont (Lafayette Co.) water levels reached the floor boards of vehicles. Gusty winds up to 43 knots (50 mph) created waves on some of the water-covered roads around Verona (Dane Co.)! Rainfall totals ranged from 1.50 to 3.00 inches based on WSR-88D Doppler radar estimates. A spotter in Verona recorded 1.98 inches. By the next morning, a total of 3.50 inches was measured in Dodgeville (Iowa Co.). Argyle (Lafayette Co.) picked up 2.53 inches of rain.

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May 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
WISCONSIN, Southeast									
Columbia County									
Wyocena	**10**	**1744CST**			**0**	**0**			**Thunderstorm Wind (EG56)**
Lafayette County									
5 SW Belmont to 2.7 NE Belmont	**10**	**1915CST 1929CST**	**7.8**	**200**	**0**	**1**	**200K**		**Tornado (F1)**
A tornado spun up 5.0 miles southwest of the village Belmont (Lafayette Co.), near the intersection of Pine Tree and Field Drive, and proceeded to track northeast to near Belmont before dissipating 2.7 miles northeast of Belmont (just southeast of the intersection of Cottage Inn Road and Bethel Grove Rd). Just east of Belmont, the tornado destroyed a farm's mobile home, injuring one of five people inside. In addition, a pole shed on this farm was damaged. On two other farms, this tornado inflicted minor to extensive damage on homes, barns, wind mills, and decks. Law enforcement officials video taped this tornado; estimated at the top end of F1 (about 110 mph).								
Marquette County									
Montello	**10**	**1923CST**			**0**	**0**			**Hail(1.00)**
Iowa County									
4.5 E Mineral Pt to 2.7 NNW Hollandale	**10**	**1939CST 2001CST**	**8.6**	**200**	**0**	**0**	**300K**		**Tornado (F1)**
The same supercell that spun up a tornado near Belmont (Lafayette Co.), resulted in another tornado in Iowa County. The Iowa County tornado spun up at a location 4.5 miles east of Mineral Point, just southeast of the intersection of County DD and Ferrell Rd. It proceeded northeast to a location 2.7 miles north-northwest of Hollandale, or about 1 mile west of the intersection of Urness Rd and Long Valley Rd. Four barns or pole sheds sustained major damage, two homes had moderate damage, and considerable tree damage was noted.									
Iowa County									
Dodgeville to Ridgeway	**10**	**1945CST**			**0**	**0**			**Hail(1.25)**
Green Lake County									
1 E Princeton	**10**	**1946CST**			**0**	**0**			**Hail(1.00)**
Jefferson County									
Ft Atkinson	**10**	**2030CST**			**0**	**0**			**Thunderstorm Wind (EG56)**
Dane County									
Cross Plains	**10**	**2042CST**			**0**	**0**			**Funnel Cloud**
Dane County									
Cross Plains	**10**	**2045CST**			**0**	**0**			**Thunderstorm Wind (EG55)**
Dane County									
Dane	**10**	**2045CST**			**0**	**0**	**10K**		**Lightning**
Dane County									
5 NW De Forest	**10**	**2048CST**			**0**	**0**			**Hail(0.75)**
Columbia County									
5 SSE Arlington	**10**	**2055CST**			**0**	**0**			**Hail(0.75)**
Dodge County									
Juneau	**10**	**2150CST**			**0**	**0**			**Thunderstorm Wind (MG56)**
Washington County									
2 W West Bend	**10**	**2215CST**			**0**	**0**			**Hail(0.88)**
Severe weather in the form of tornadoes, damaging straight-line winds up to about 56 knots (65 mph) which toppled large trees and power-lines, and large hail, affected parts of south-central and southeast Wisconsin on May 10, 2003. This was the first, organized severe weather episode in 2003 for this part of the state - a late start. The same supercell spawned a tornado in Lafayette County, and then a short time later, another tornado in Iowa County. Refer to the individual tornado events for details. This supercell									

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

maintained its mesocyclone circulation as it moved northeast through western Dane County to southeast Columbia County, and then across northern Dodge County. A funnel cloud was spotted near Cross Plains (Dane Co.), but there were no additional tornado sightings other than the events in the counties of Lafayette and Iowa. Synoptically, a line of thunderstorms moved northeast through southern Wisconsin, with a supercell forming on the left edge of the line over southeastern Grant County. This supercell then moved northeast. Lightning struck a home near Dane (Dane Co.) resulting in minor fire damage.

WIZ066-071	**Milwaukee - Racine**								
	11	**0800CST 1100CST**			**0**	**0**	**30K**		**Strong Wind (MG47)**
WIZ072	**Kenosha**								
	11	**0800CST 1100CST**			**0**	**0**	**50K**		**High Winds (MG50)**

High winds gusting from the west-southwest up to 50 knots (58 mph) at the Kenosha Coast Guard Station, resulted in downed trees, tree branches, and power-lines in around and around the city of Kenosha. One vehicle in the city of Kenosha was damaged after a tree fell on it. Elsewhere across south-central and southeast Wisconsin, wind gusts were in the 35 to 47 knots (40 to 54 mph), resulting in scattered reports of small tree limbs breaking from trees. A peak gust of 47 knots (54 mph) was measured at Milwaukee's Mitchell Field (Milwaukee Co.). Altogether, about 6000 customers lost electrical power in the counties of Milwaukee, Racine, and Kenosha due to tree branches falling onto power-lines. The widespread, strong to high winds were related to a deep low pressure moving east-northeast away from Wisconsin.

Rock County									
Beloit	**28**	**1320CST**			**0**	**0**			**Hail(0.75)**

An isolated severe thunderstorm dumped large hail and heavy rains in Beloit (Rock Co.).

Green Lake County									
2 SE Princeton	**30**	**1320CST**			**0**	**0**			**Funnel Cloud**
Dane County									
6 N Mt Horeb	**30**	**1605CST**			**0**	**0**			**Thunderstorm Wind (EG56)**
Dane County									
2.7 N Mt Vernon to 3 WSW Verona	**30**	**1625CST 1630CST**	**3.1**	**25**	**0**	**0**			**Tornado (F0)**

A very weak tornado spun up north of Mt. Vernon and moved east to the rural area southwest of Verona. Only minor vegetation damage was noted, leading to an estimated wind speed of about 43 knots (50 mph). It was video taped by a mobile severe weather spotter.

Green County									
1.9 NW Oakley to 5.2 E Oakley	**30**	**1652CST 1704CST**	**6**	**100**	**0**	**0**			**Tornado (F1)**

A supercell spawned a rain-wrapped tornado that tracked southeast through a rural portion of Green County about 6 miles southwest and south of Brodhead. One home sustained minor damage to its siding and shutters, and minor damage was noted to a storage shed; otherwise, only tree damage was reported. It is estimated that winds speeds with this tornado were about 70 knots (80 mph). This tornado continued east-southeast out of Green County at a location 6.0 miles east of Oakley (where County Trunk T doglegs west in Green County) and into the southwest corner of Rock County.

Rock County									
Beloit	**30**	**1700CST 1900CST**			**0**	**0**			**Heavy Rain**
Rock County									
2.3 SW Avon to 3.2 SE Avon	**30**	**1704CST 1712CST**	**4.1**	**100**	**0**	**0**			**Tornado (F1)**

This tornado, which spun up in southeast Green County, tracked east-southeast into extreme southwest Rock County at a point 2.3 miles southwest of Avon, where Douglas Road intersects County Trunk T. In Rock County, this tornado blew over a small grain bin, blew a gravity bin off its foundation, flipped and twisted a large field sprinkler system, lightly damaged a home's siding and roof, and ripped up some yard fencing. It is estimated that maximum wind were about 78 to 86 knots (90 to 100 mph). It dissipated in the wooded bottom lands of the Sugar River southeast of Avon, about three-fourths of a mile north of the Illinois state border.

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

Fond Du Lac County

4 W Eldorado	**30**	**1720CST** **1820CST**			**0**	**0**			**Thunderstorm Wind (EG50)**

Several clusters of thunderstorms moved east-southeast through south-central and southeast Wisconsin on May 30, 2003, resulting in scattered reports of tornadoes and damaging, straight-line downburst winds that toppled large trees and power-lines. One thunderstorm cell attained supercell status, and after moving east out of Iowa County, turned right and moved east-southeast through the area south of Madison. A very weak tornado was noted southwest of Verona, but thereafter, only rotating wall cloud reports were received. Another tornado spun up in the rural area southwest of Brodhead (Green Co.), and proceeded to move east-southeast into extreme southwest Rock County. The parent thunderstorm for this tornado eventually moved east across the city of Beloit and dumped 1.50 inches of heavy rain, resulting in urban flooding (water up to the floor board at one location) that led to a couple vehicle accidents. Detailed information about the Dane County and Green-Rock County tornado can be found in the individual tornado reports.

National Weather Service
Storm Data and Unusual Weather Phenomena

June 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
WISCONSIN, Southeast									
Green Lake County									
2 N Markesan	**08**	**1330CST**			**0**	**0**			**Funnel Cloud**
Fond Du Lac County									
4.7 NNW Eden to 3.6 ESE Fond Du Lac	**08**	**1333CST 1336CST**	**30**	**.8**	**0**	**0**			**Tornado (F0)**
A short-lived, weak tornado was videotaped by a storm chaser east-southeast of the city of Fond du Lac up on the ridge locally known as "The Ledge." This tornado spun up on the east side of Rienzi Cemetery, about one-half mile east of the intersection of County Trunk Highway K and Rienzi Rd., and moved north-northeast to just north of the intersection of County Trunk T and Artesian Rd in the vicinity of Taycheedah Creek. Only minor vegetative damage was noted to trees and grasses.									
Fond Du Lac County									
3 SE Eden	**08**	**1420CST**			**0**	**0**			**Funnel Cloud**
Green Lake County									
3 E Kingston	**08**	**1425CST**			**0**	**0**			**Funnel Cloud**
Dodge County									
5 S Fox Lake	**08**	**1435CST**			**0**	**0**			**Funnel Cloud**
A cold-core low pressure system from the surface to 30,000 feet above the ground moved southeast through Fond du Lac County to Milwaukee County. The combination of daytime heating, surface dewpoints in the low to mid 60s, and the tight rotation of the low pressure resulted in the development of clusters or short lines of storms. Some of the storms managed to develop a rotating updraft and interacting outflow boundaries which led to the spin up of one tornado over Fond du Lac County. Refer to tornado report for more details. Several funnel clouds were also sighted. Many of the non-severe storms had gusty winds to 35 to 39 knots (40 to 45 mph), small hail, and brief heavy rains of one-half inch. Spotters indicated that cloud bases were low.									
Rock County									
3 NW Beloit	**18**	**1252CST**			**0**	**0**			**Thunderstorm Wind (EG56)**
Columbia County									
Cambria to 4.5 N Fall River	**18**	**1943CST 1953CST**			**0**	**0**			**Thunderstorm Wind (EG50)**
Dodge County									
4.7 S Randolph	**18**	**1950CST**			**0**	**0**			**Thunderstorm Wind (EG50)**
Widely scattered marginally-severe thunderstorms popped up over parts of south-central and southeast Wisconsin during a typical summer day. Powerful gusty winds to an estimated 56 knots (65 mph) toppled large trees and some power-lines.									
Iowa County									
5 SE Highland	**25**	**1305CST**			**0**	**0**	**1K**		**Thunderstorm Wind (EG61)**
Sauk County									
Lake Delton	**25**	**1338CST**			**0**	**0**			**Hail(0.88)**
Sauk County									
3 N Baraboo	**25**	**1415CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Columbia County									
1 N Arlington	**25**	**1420CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Rock County									
2 S Evansville	**25**	**1428CST**			**0**	**0**			**Thunderstorm Wind (EG65)**
Columbia County									
2 W Friesland	**25**	**1445CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Dane County									
Stoughton	**25**	**1448CST**			**0**	**0**			**Thunderstorm Wind (EG52)**

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

Rock County
5 SSW Evansville | **25** | **1500CST** | **0** | **0** | **15K** | **Thunderstorm Wind (EG52)**

Fond Du Lac County
3.2 NW Brandon | **25** | **1505CST** | **0** | **0** | **1K** | **Thunderstorm Wind (EG61)**

Jefferson County
3 N Jefferson | **25** | **1515CST** | **0** | **0** | | **Thunderstorm Wind (EG52)**

Dane County
Rockdale | **25** | **1520CST** | **0** | **0** | | **Thunderstorm Wind (EG52)**

Clusters or short lines of thunderstorms, some severe, moved east-southeast through parts of south-central and southeast Wisconsin. The primary effect was powerful, downburst, straight-line winds that toppled large trees and some power-lines. Estimated gusts were mostly in the 52 to 56 knot range (60 to 65 mph). Two gustnadoes were observed southeast of Highland (Iowa Co.) on the west shore of Blackhawk Lake. Other than tearing up some trees, the gustnadoes blew around camping gear, tables, etc. A boat on Blackhawk Lake was spun around by one of the gustnadoes. A gustnado was also observed by a storm spotter northwest of Brandon (Fond du Lac Co.). Its path length was about 1/4 to 1/2 mile and it managed to shred or push down some corn crop and small tree limbs. Gustnadoes are ground-based vortices that spin up on a gust front preceding a downburst, and are not recognized as true tornadoes. Rather, they are documented as thunderstorm wind events. Last, but not least, the powerful thunderstorm winds blew over a silo located on a farm south of Evansville (Rock Co.).

Sauk County
3 W Plain | **28** | **1455CST** | **0** | **0** | | **Hail(1.00)**

Sauk County
3 W Plain | **28** | **1507CST** | **0** | **0** | | **Thunderstorm Wind (EG52)**

Jefferson County
Ft Atkinson | **28** | **1808CST**
1818CST | **0** | **0** | | **Thunderstorm Wind (EG50)**

Scattered thunderstorms, some marginally-severe, moved east-southeast across parts of south-central and southeast Wisconsin. Powerful downburst, straight-line winds gusted to an estimated 52 knots (60 mph), resulting in toppled large trees. Large hail was also noted west of Plain (Sauk Co.).

National Weather Service
Storm Data and Unusual Weather Phenomena

July 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
LAKE MICHIGAN									
LMZ645	**North Pt Lt To Wind Pt Wi**								
Milwaukee Harbor	**04**	**0545CST**			**0**	**0**			**Marine Tstm Wind (MG37)**
LMZ646	**Wind Pt Lt Wi To Winthrop Hbr Il**								
Kenosha	**04**	**0546CST**			**0**	**0**			**Marine Tstm Wind (MG47)**
LMZ645	**North Pt Lt To Wind Pt Wi**								
Milwaukee Harbor	**04**	**0620CST**			**0**	**0**			**Marine Tstm Wind (MG38)**
LMZ643	**Sheboygan To Pt Washington Wi**								
Sheboygan	**04**	**0628CST**			**0**	**0**			**Marine Tstm Wind (MG46)**
LMZ645	**North Pt Lt To Wind Pt Wi**								
Milwaukee Harbor	**04**	**0630CST**			**0**	**0**			**Marine Tstm Wind (MG37)**
LMZ646	**Wind Pt Lt Wi To Winthrop Hbr Il**								
Kenosha	**04**	**0635CST**			**0**	**0**			**Marine Tstm Wind (MG48)**
A line of severe thunderstorms moved east across southern Wisconsin and then across the adjacent Lake Michigan waters; weakening with time. Powerful, downburst, straight-line winds were the primary effect									
LMZ646	**Wind Pt Lt Wi To Winthrop Hbr Il**								
Kenosha	**08**	**0825CST**			**0**	**0**			**Marine Tstm Wind (MG35)**
An isolated thunderstorm briefly pulsed and produced strong wind gusts.									
LMZ646	**Wind Pt Lt Wi To Winthrop Hbr Il**								
Kenosha	**15**	**0245CST**			**0**	**0**			**Marine Tstm Wind (MG35)**
LMZ645	**North Pt Lt To Wind Pt Wi**								
Wind Point	**15**	**0251CST**			**0**	**0**			**Marine Tstm Wind (EG43)**
LMZ665	**Lm Sheboygan Wi To Winthrop Harbor Il Ewd Byd 5Nm To Mid Line Of Lake**								
37 ENE Winthrop Harbo	**15**	**0600CST**			**0**	**0**			**Marine Tstm Wind (MG34)**
A line of severe thunderstorms, after raking parts of south-central and southeast Wisconsin with damaging straight-line wind gusts estimated to 65 knots (75 mph), continued out over the adjacent Lake Michigan waters, but weakened with time.									
LMZ643	**Sheboygan To Pt Washington Wi**								
Sheboygan	**30**	**2142CST**			**0**	**0**			**Marine Tstm Wind (MG53)**
A thunderstorm cluster quickly pulsed up just west of city of Sheboygan, and then moved east/northeast out over the adjacent Lake Michigan waters. Powerful, downburst, straight-line winds were the primary effect before the storms diminished in strength.									
LMZ643	**Sheboygan To Pt Washington Wi**								
Sheboygan	**31**	**1527CST**			**0**	**0**			**Marine Tstm Wind (MG44)**
A thunderstorm cell in a short line of storms pulsed to severe weather limits and generated strong wind gusts up to 44 knots (51 mph) as it moved out over the waters of Lake Michigan east of Sheboygan County. The storms were related to a closed upper-level low pressure system moving slowly southeast through the region									
WISCONSIN, Southeast									
Sauk County									
Plain	**04**	**0405CST**			**0**	**0**	**1K**		**Thunderstorm Wind (EG52)**
Sauk County									
5 NE Merrimac	**04**	**0425CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Jefferson County									
2 E Watertown	**04**	**0500CST**			**0**	**0**			**Thunderstorm Wind (EG56)**
Waukesha County									
Waukesha	**04**	**0550CST**			**0**	**0**			**Thunderstorm Wind (MG55)**

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
WISCONSIN, Southeast									
		0610CST							
Milwaukee County									
3 E Timmerman Arpt to 5.7 SE Timmerman Arpt	**04**	**0610CST**			**0**	**0**			**Thunderstorm Wind (MG60)**
Dane County									
Mt Horeb to Mc Farland	**04**	**0617CST 0625CST**			**0**	**0**			**Thunderstorm Wind (EG56)**
Milwaukee County									
Brown Deer to Fox Pt	**04**	**0625CST 0630CST**			**0**	**0**	**3K**		**Thunderstorm Wind (EG56)**
Racine County									
1.5 N Caledonia to 4 NW Wind Pt	**04**	**0626CST 0635CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Waukesha County									
2.6 SE Eagle	**04**	**0640CST**			**0**	**0**	**5K**		**Thunderstorm Wind (EG56)**

A broken line of thunderstorms, some severe, moved east across south-central and southeast Wisconsin during the pre-dawn hours of July 4, 2003. This was the first of 5 consecutive days with some severe convection. In general, downburst, straight-line wind gusts of 50 to 60 knots (58 to 69 mph) were the cause of scattered reports of toppled large trees and power lines. All other locations had gusts to at least 39 to 48 knots (45 to 55 mph) as the storms moved east. In the city of Milwaukee (Milwaukee Co.) a tree was pushed onto a home, resulting in minor damage. Likewise, southeast of Eagle (Waukesha Co.) the powerful thunderstorm winds pushed a tree onto a home's roof, resulting in minor damage. In addition, thunderstorm winds pushed a tree onto a home in Plain (Sauk Co.), resulting in minor damage. The storm moved east out over the Lake Michigan waters, but gradually weakened. Newspaper reports indicated that at least 45,000 customer in southeast Wisconsin lost power for several hours, while at least 9000 customers in south-central Wisconsin had a similar experience due to tree debris knocking down power-lines.

Green County									
4.5 WNW Monroe	**05**	**0215CST**			**0**	**0**			**Thunderstorm Wind (EG52)**

An isolated thunderstorm popped up near Monroe (Green Co.), and briefly generated powerful winds which toppled several large trees. This was the 2nd of five consecutive days with some kind of severe convection across south-central and/or southeast Wisconsin. Synoptically, a series of short wave troughs in the upper atmosphere moved east across Wisconsin while a surface frontal boundary oscillated north and south across southern Wisconsin.

Dane County									
5 SW Madison	**06**	**0615CST**			**0**	**0**			**Hail(0.88)**
Dane County									
Middleton to Maple Bluff	**06**	**0620CST 0640CST**			**0**	**0**	**30K**		**Thunderstorm Wind (EG65)**
Rock County									
Janesville	**06**	**0637CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Dane County									
5 SSE Sun Prairie	**06**	**0650CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Dane County									
Middleton	**06**	**0715CST**			**0**	**0**	**10K**		**Lightning**
Waukesha County									
Waukesha to 4 S Waukesha	**06**	**0805CST**			**0**	**0**			**Thunderstorm Wind (MG56)**
Racine County									
2 E Sturtevant	**06**	**1140CST**			**0**	**0**	**1M**		**Lightning**

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
WISCONSIN, Southeast									
Rock County									
1 W Clinton	**06**	**1358CST**			**0**	**0**			**Hail(0.75)**
Rock County									
1 W Clinton	**06**	**1358CST**			**0**	**0**	**5K**		**Thunderstorm Wind (EG65)**
Walworth County									
Delavan	**06**	**1405CST**			**0**	**0**			**Hail(0.75)**
Walworth County									
Delavan	**06**	**1405CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Racine County									
Burlington	**06**	**1430CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Walworth County									
3 SSE East Troy	**06**	**1430CST**			**0**	**8**			**Lightning**
Kenosha County									
Silver Lake	**06**	**1440CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Kenosha County									
Kenosha	**06**	**1505CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Dodge County									
1.2 NW Horicon	**06**	**1605CST**	**0.1**	**25**	**0**	**0**			**Tornado (F0)**
A brief, weak tornado spun up on the edge of the Horicon Marsh, northwest of the city of Horicon, resulting in only minor vegetative damage.									
Dodge County									
1 W Kekoskee	**06**	**1615CST**	**0.1**	**25**	**0**	**0**			**Tornado (F0)**
A brief, weak tornado spun up over the eastern edge of the Horicon Marsh and west of Kekoskee (just west of Rockvale Rd.), resulting in only minor vegetative damage.									
Fond Du Lac County									
4.1 SSW Campbellsport	**06**	**1643CST**	**0.1**	**25**	**0**	**0**			**Tornado (F0)**
This tornado spun up at a location about 4.1 miles south-southwest of Campbellsport (Fond du Lac Co.) , or about 50 yards north and 1/3 mile east of the intersection of County Highway BB and St. Kilian Dr. It quickly moved east-southeast, and didn't result in an property damage in Fond du Lac County. It proceeded for about two-thirds of a mile into Washington County where it damaged 3 homes.									
Washington County									
2 N Wayne to 2 NE Wayne	**06**	**1643CST 1645CST**	**0.7**	**40**	**0**	**0**	**20K**		**Tornado (F1)**
This tornado initially spun up in adjacent Fond du Lac County, and entered Washington County at a point 2.0 miles north of Wayne, about 1/3 mile east of the intersection of County Highway BB and St. Kilian Dr. It moved east-southeast and damaged 3 homes in Washington County. Damage to windows, a garage, some siding, and a roof was noted. Maximum wind speeds were estimated at 70 knots (80 mph), or at the bottom of the F1 rating. It dissipated at a location 2.0 miles north-northeast of Wayne, just east of Lake Benice Dr. There were no injuries or deaths.									
Dodge County									
1.6 ESE Theresa	**06**	**1647CST**	**0.1**	**25**	**0**	**0**			**Tornado (F0)**
A brief, weak tornado spun up east-southeast of Theresa, in a marsh east of West Bend Rd., resulting in only minor vegetative damage.									
Washington County									
3 NE West Bend	**06**	**1651CST**			**0**	**0**			**Funnel Cloud**
Waukesha County									
Okauchee	**06**	**1700CST 1900CST**			**0**	**0**			**Heavy Rain**

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

Two rounds of scattered severe convection affected south-central and southeast Wisconsin on Sunday, July 6, 2003. The first round occurred during the morning hours and the second during the late afternoon hours. Powerful, downburst, damaging, straight-line winds toppled large trees and/or power-lines, 4 weak tornadoes spun up, a separate funnel cloud was reported, and there were a couple occurrences of large hail. Detailed descriptions of the four tornadoes can be found in separate reports.

Probably the hardest-hit area extended from Middleton (Dane Co.) to Maple Bluff. In the Maple Bluff area, 8 homes sustained minor wind damage, and a car and two boats were damaged by toppled trees or large branches during the morning round. Wind gusts in the Maple Bluff area were estimated to briefly reach 65 knots (75 mph). Lightning struck a home in Middleton, resulting in a roof/attic fire. Near Clinton (Rock Co.) the powerful winds pushed a large tree on a home, resulting in minor damage. At the Alpine Ski Resort south-southeast of East Troy (Walworth Co.), lightning struck a man holding a tent metal pole, resulting in serious injuries. The bolt injured 7 other, adjacent individuals who were standing in ankle deep water. Six of the eight people were hospitalized. Near Sturtevant (Racine Co.) an apartment complex sustained major damage due to a lightning fire. Heavy rains of 1.5 inches resulted in minor urban-type flooding in the Okauchee (Waukesha Co.) area. All together, at least 3000 customers lost electrical power due to tree limbs falling on power-lines or lightning strikes. Synoptically, an upper level low pressure system and vorticity maximum moved east-southeast through the Dodge County area, resulting in bands of thunderstorms. The tornadoes occurred near the low pressure center where large-scale atmospheric circulation allowed for rotating updrafts in a few thunderstorm.

This was the 3rd of five consecutive days with some kind of severe convection across south-central and/or southeast Wisconsin. Synoptically, a series of short wave troughs in the upper atmosphere moved east across Wisconsin while a surface frontal boundary oscillated north and south across southern Wisconsin.

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
Iowa County									
2.5 N Clyde	**07**	**0410CST**			**0**	**0**			**Hail(0.75)**
An isolated thunderstorm briefly pulsed to severe weather limits, producing large hail. This was the 4th consecutive day with some kind of severe weather in south-central and/or southeast Wisconsin.									
Lafayette County									
3 SW Benton to 4 NNE Leadmine	**08**	**0612CST 0616CST**			**0**	**0**			**Thunderstorm Wind (EG56)**
Rock County									
Beloit	**08**	**0640CST**			**0**	**0**	**3K**		**Lightning**
Scattered thunderstorms affected the south-central part of Wisconsin during the morning hours. One of them briefly pulsed to severe weather limits, and produced downburst, straight-line winds that toppled large trees near Benton (Lafayette Co.). Wind gusts were estimated to be 56 knots (65 mph). Lightning struck a power transformer on the west side of Beloit, resulting the loss of electricity to dozens of homes and some schools for a few hours. July 8, 2003, was the 5th consecutive day with some kind of severe weather in south-central and/or southeast Wisconsin. Synoptically, a frontal boundary was located from southern Iowa through central Illinois. Warm-air advection and a vorticity lobe triggered the storms.									
Iowa County									
4 SSW Barneveld	**11**	**1400CST**			**0**	**0**		**5K**	**Hail(0.75)**
A pre-dawn thunderstorm pulsed to severe weather limits as it moved south-southeast through eastern Iowa County. It dumped enough hail to result in corn crop damage on two farms. Synoptically, there was leftover cold air and northwest flow aloft.									

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July 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
WISCONSIN, Southeast									
Rock County									
Beloit	**15**	**0000CST 0200CST**			**0**	**0**			**Heavy Rain**
Dodge County									
Randolph to 8 SW Richwood	**15**	**0015CST 0045CST**			**0**	**0**	**50K**		**Thunderstorm Wind (EG56)**
Columbia County									
Columbus	**15**	**0030CST**			**0**	**0**			**Thunderstorm Wind (EG56)**
Dane County									
3 S Madison to Albion	**15**	**0035CST 0105CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Jefferson County									
Waterloo to 2 SE Palmyra	**15**	**0045CST 0125CST**			**0**	**0**	**175K**		**Thunderstorm Wind (EG65)**
Jefferson County									
Watertown	**15**	**0100CST**			**0**	**1**			**Lightning**
Rock County									
Evansville to 5 SE Clinton	**15**	**0105CST 0140CST**			**0**	**0**	**2K**		**Thunderstorm Wind (EG56)**
Waukesha County									
Oconomowoc to Muskego	**15**	**0115CST 0200CST**			**0**	**0**			**Thunderstorm Wind (EG61)**
Jefferson County									
1.8 NW Palmyra	**15**	**0120CST**			**0**	**0**	**2K**		**Lightning**
Walworth County									
Whitewater to Genoa City	**15**	**0120CST 0205CST**			**0**	**0**			**Thunderstorm Wind (EG56)**
Racine County									
Burlington	**15**	**0205CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Kenosha County									
2 W New Munster	**15**	**0210CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Kenosha County									
3.4 W Kenosha	**15**	**0215CST**			**0**	**0**	**35K**		**Lightning**

Clusters of thunderstorms over central Wisconsin merged and strengthened into a broad line as they moved southeast through south-central and southeast Wisconsin during the pre-dawn hours of July 15, 2003. Powerful downburst, straight-line winds gusting to an estimated 65 knots (75 mph) resulted in tree, power-line, and structural damage primarily from souhteastern Columbia through parts of Dodge, Jeffeson, Waukesha, Rock, Walworth, Racine, and Kenosha Counties. Associated, brief, intense rains lowered visibilities to less than 50 yards, leading to minor ponding of water in low spots as well. In southwestern Dodge County, a church and 6 homes sustained tree debris damage. In Jefferson County, where the storms were the most intense, there were many reports of toppled trees and powerlines, especially in the cities of Watertown and Fort Atkinson. Several homes and vehicles in both cities sustained tree debris damage. In Fort Atkinson, 24 power-linen poles were toppled by tree debris, resulting in the loss of electricity to 5800 customers in the area. In the village of Sullivan, the hurricane-force winds managed to enter the attic of a church through a vent, resulting in part of the roof exploding outward. Northwest of Palmyra, a pivot irrigation system on a large vegetable farm was flipped over and damaged. Nearby lightning struck a power-line leading to a current surge into a home which resulted in electrical damage. A Watertown women was injured after being struck be lightning. As the storms moved through Waukesha their powerful winds flipped over a semi-tractor on Interstate 94 just south of Delafield. In addtion, the winds pushed a tree onto a van in Beloit, resulting in minor damage. West of the city of Kenosha (Kenosha Co.), three, parked, semi-tractors were severly damaged due to a lightning fire. The storms weakened as they moved southeast over the Lake Michigan waters. All together, 11,500 customers lost electricity for several hours due to the storms, primarily in the counties of Jefferson, Waukesha, and Rock.

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
WISCONSIN, Southeast									
Green Lake County									
Berlin to 4 SE Berlin	**20**	**1528CST 1532CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Fond Du Lac County									
Rosendale	**20**	**1550CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Fond Du Lac County									
3.5 NNW Lamartine	**20**	**1557CST**			**0**	**0**			**Hail(0.75)**
A cluster of storms pulsed up to severe weather limits as it moved southeast through the northeastern part of Green Lake County through the western part of Fond du Lac County. Powerful, downburst, straight-line winds gusting to estimated 52 knots (60 mph) toppled large trees. Some large hail was noted as well. Synpotically, a short-wave aloft moved east across southern Wisconsin as a low-level cap/inversion broke due to daytime heating.									
Jefferson County									
Watertown	**30**	**1349CST**			**0**	**0**			**Thunderstorm Wind (MG50)**
Waukesha County									
3 NE Wales to 1.5 NE Wales	**30**	**1600CST 1800CST**			**0**	**0**			**Heavy Rain**
Waukesha County									
1.5 NNW Elm Grove	**30**	**1630CST**			**0**	**0**			**Thunderstorm Wind (MG54)**
Sheboygan County									
Sheboygan	**30**	**2100CST 2359CST**			**0**	**0**			**Heavy Rain**
Clusters or short lines of storms developed during the afternoon heating over southeastern Wisconsin. Some of them briefly reached severe weather limits. Powerful, downburst winds measured to 50 to 54 knots (58 to 62 mph) toppled some large trees in Watertown (Jefferson Co.) and in Elm Grove (Waukesha Co.). Training of back-building thunderstorm cells northeast of Wales (Waukesha Co.) resulted in WSR-88 Doppler radar rainfall estimates of 3 to 4 inches. Law enforcement reports indicated that water covered a couple low-lying roads in the area northeast of Wales. Likewise, a radar-estimated two to three inches of rain fell on the city of Sheboygan (Sheboygan Co.), resulting in water-over-the-curb, urban-type flooding.									
Marquette County									
2 NW Oxford	**31**	**1150CST**			**0**	**0**			**Hail(0.75)**
Iowa County									
6 W Avoca	**31**	**1300CST**			**0**	**0**			**Hail(1.00)**
Sheboygan County									
4 NE Howards Grove	**31**	**1304CST 1308CST**			**0**	**0**			**Hail(1.00)**
Fond Du Lac County									
2.3 S Ripon	**31**	**1314CST**			**0**	**0**			**Thunderstorm Wind (EG56)**
Fond Du Lac County									
1.5 SW Ladoga to 1.5 E Oakfield	**31**	**1340CST 1352CST**			**0**	**0**		**20K**	**Thunderstorm Wind (EG56)**
Iowa County									
2 S Dodgeville to Hollandale	**31**	**1356CST 1410CST**			**0**	**0**			**Hail(0.75)**
Green County									
3 NW New Glarus	**31**	**1434CST**			**0**	**0**			**Hail(0.75)**
Rock County									
1 E Orfordville	**31**	**1543CST**			**0**	**0**			**Hail(0.75)**
Jefferson County									
3.7 SE Sullivan	**31**	**1653CST**			**0**	**0**			**Hail(0.75)**

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July 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
WISCONSIN, Southeast									
Waukesha County									
4.2 NW Eagle	**31**	**1705CST**			**0**	**0**			**Hail(1.00)**
Walworth County									
3.8 NNE East Troy to 3.8 NNE East Delavan	**31**	**1735CST**			**0**	**2**			**Lightning**

Several short lines, or spokes of thunderstorms moved southeast across south-central and southeast Wisconsin during the afternoon and early evening hours. Powerful, downburst, straight-line winds estimated to 56 knots (65 mph) toppled large trees, power-lines, and in one case, leveled some crops. Large hail was also observed. In Fond du Lac County, corn and soybean crop damage occurred between State Highway 26 and County Trunk Highway TC, southwest of Ladoga. Synoptically, an upper-level low pressure moved southeast through Wisconsin. Afternoon heating with cool air aloft allowed for the development of strong updrafts that lead to some of the thunderstorm cells becoming severe.

National Weather Service
Storm Data and Unusual Weather Phenomena

August 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

LAKE MICHIGAN

LMZ643 **Sheboygan To Pt Washington Wi**

Sheboygan **01** **0239CST** **0** **0** **Marine Tstm Wind (MG53)**

LMZ643 **Sheboygan To Pt Washington Wi**

Port Washington **01** **0300CST** **0** **0** **Marine Tstm Wind (EG56)**

LMZ644 **Pt Washington To North Pt Lt Wi**

2 N Whitefish Bay **01** **0430CST** **0** **0** **Marine Tstm Wind (EG50)**

The remains of severe thunderstorms moved out over the Lake Michigan nearshore waters during the pre-dawn hours. Strong downburst winds toppled large trees along the shoreline, based on spotter reports

WISCONSIN, Southeast

WIZ057>060-062>072 **Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

01 **0000CST** **0** **0** **Drought**
31 **2359CST**

Drought conditions returned to parts of south-central and southeast Wisconsin during the month of August, 2003, The jet stream and associated low pressure systems stayed north of Wisconsin, resulting in few cold front passages. Conditions worsened from abnormally dry (D0 rating) to a moderate drought (D1 rating) as the month progressed. This drought continued into September, 2003, and ultimately reached the severe category (D2). Crop and fruit tree farms without irrigation capability were especially affected. Corn, soybeans, and alfalfa hay crops were severely stressed thanks to many sunny days with warm to hot temperatures in the 80s and 90s. In addition, ornamental flowers and many trees were severely stressed across south-central and southeast Wisconsin. Some trees, especially young ones, dropped their leaves. Harvest yields were expected to be severely reduced. In Lafayette County, farmers were expected to experience 35 to 40% damage to corn, 50% to damage to soybeans, and 35% damage to the hay crop. In general, there was no 3rd hay drop which is normally harvested in August. In addition, some farmers by late August chopped corn for silage much earlier than normal; and some chopped soybeans for silage as well - a very rare occurrence. Crop damage may reach into the millions of dollars once the harvest is completed.

Many locations received less than 1.00 inches of rain, and several spots had less than one-half of an inch. Only 0.57 fell at Milwaukee Mitchell Field (Milwaukee Co.) during August, and during the period of August 9-24 no measurable rain was recorded at this location. For the period of Jan 1, 2003 through August 31, 2003, only 13.17 inches of precipitation was recorded at Mitchell Field, or 10.97 inches below normal. The month of May, 2003, was the only month at Mitchell Field with above normal rainfall for 2003 through the end of August, 2003. Things weren't much better in the Madison (Dane Co.) area, where only 0.87 inch of rain fell for the month at Truax Field. Both the Milwaukee and Madison August monthly rainfall totals were 3.46 inches below normal. The hottest day of the 2003 summer for Milwaukee occurred on August 21st when 96 degrees was recorded. Madison topped out at 94 on the 26th. Milwaukee experienced 6 days during the month with maximum temperatures of 90 or higher, while Madison came in with 7 days. Milwaukee's average August monthly temperature was 73.3 degrees, or 2.7 above normal, while Madison averaged 71.9 degrees which was 2.8 above normal. Looking back into July, 2003, the dry pattern set in on July 16th. Thereafter, very little rain occurred. The 3-month summer period of June-July-August 2003 was the driest in 3 decades in West Bend (Washington Co.), where only 5.11 inches fell (7.82 inches below normal). Similar conditions were experienced throughout southern Wisconsin. This drought continued into September, 2003.

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
WISCONSIN, Southeast									
Green County									
Brodhead	**01**	**0113CST**			**0**	**0**			**Hail(1.00)**
Rock County									
4 S Edgerton to 4 SE Edgerton	**01**	**0132CST**			**0**	**0**	**50K**		**Hail(0.02)**
Dane County									
4.5 NW Rockdale	**01**	**0150CST**			**0**	**0**			**Hail(1.25)**
Rock County									
4 NE Milton	**01**	**0155CST**			**0**	**0**			**Hail(1.00)**
Waukesha County									
Merton to Menomonee Falls	**01**	**0248CST 0310CST**			**0**	**0**			**Thunderstorm Wind (EG56)**
Washington County									
7 S Hartford to Germantown	**01**	**0255CST 0315CST**			**0**	**0**	**10K**		**Thunderstorm Wind (EG52)**
Waukesha County									
3.6 NE Merton	**01**	**0255CST**			**0**	**0**		**25K**	**Hail(1.00)**
Ozaukee County									
Mequon	**01**	**0300CST**			**0**	**0**		**15K**	**Hail(1.00)**
Ozaukee County									
Newburg to Port Washington	**01**	**0300CST 0315CST**			**0**	**0**			**Thunderstorm Wind (EG56)**
Washington County									
2 NNW West Bend	**01**	**0305CST 0310CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Milwaukee County									
Fox Pt	**01**	**0430CST**			**0**	**0**			**Thunderstorm Wind (EG50)**

An upper low dropped into Wisconsin, which contributed to the development of thunderstorms across the south-central and southeast parts of the state. Strong thunderstorm winds up to an estimated 56 knots (65 mph) knocked down trees at scattered locations across the area. The powerful winds toppled large trees onto a truck in Richfield (Washington Co.), severely damaging the trailer. Up to 1.75" diameter hail wrecked havoc on several farms south to southeast of Edgerton (Rock Co.), damaging corn, soybean, and tobacco crops. A small tobacco plot on one farm was a "total loss." The damage swath was about 1 mile wide and 4 miles long. Lightning ignited a fire at the Mequon Office Park in Mequon (Ozaukee Co.) which severely damaged an office building, and destroyed a business's furniture and computers. Hail damage to several fruit farms was also noted in Mequon. Roughly 4,500 customers in southeast Wisconsin lost electrical power due to lightning strikes and/or tree debris hitting power lines. The hardest hit locations were Port Washington (Ozaukee Co.), West Bend (Washington Co.), and Menomonee Falls (Waukesha Co.).

Lafayette County									
Darlington	**02**	**1255CST**			**0**	**0**			**Hail(0.75)**
Rock County									
Janesville	**02**	**1808CST**			**0**	**0**			**Hail(0.75)**
Columbia County									
1 E Wisconsin Dells	**02**	**1825CST**			**0**	**0**			**Hail(0.88)**
Columbia County									
Cambria	**02**	**1935CST**			**0**	**0**			**Hail(0.75)**
Dodge County									
4 S Randolph	**02**	**2025CST**			**0**	**0**			**Hail(0.75)**

Hail reached up to 0.88" in diameter at Wisconsin Dells (Sauk Co.).

WISCONSIN, Southeast

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
Sheboygan County									
2 NW Plymouth	**03**	**1223CST**			**0**	**0**			**Funnel Cloud**
Milwaukee County									
Greenfield	**03**	**1245CST**			**0**	**0**	**10K**		**Lightning**
Racine County									
Union Grove	**03**	**1300CST**			**0**	**0**			**Hail(0.75)**
Washington County									
West Bend	**03**	**1300CST 1430CST**			**0**	**0**			**Heavy Rain**
Washington County									
West Bend	**03**	**1314CST**			**0**	**0**			**Thunderstorm Wind (EG52)**
Racine County									
Union Grove	**03**	**1315CST**			**0**	**0**			**Heavy Rain**
Washington County									
West Bend	**03**	**1330CST**			**0**	**0**			**Hail(0.75)**
Washington County									
1.4 NW Wayne	**03**	**1346CST**			**0**	**0**			**Hail(0.75)**
Jefferson County									
Waterloo to 7 SE Waterloo	**03**	**1400CST 1530CST**			**0**	**0**			**Heavy Rain**
Dane County									
East Bristol	**03**	**1425CST 1427CST**			**0**	**0**			**Hail(0.75)**
Washington County									
7.5 S Hartford	**03**	**1426CST**			**0**	**0**			**Hail(1.00)**
Columbia County									
10 WSW Columbus	**03**	**1428CST 1435CST**			**0**	**0**			**Hail(0.75)**
Dane County									
East Bristol	**03**	**1430CST 1445CST**			**0**	**0**		**10K**	**Hail(0.75)**
Dodge County									
2 S Waupun	**03**	**1430CST**			**0**	**0**	**5K**		**Thunderstorm Wind (EG52)**
Jefferson County									
3 SE Ft Atkinson	**03**	**1452CST**			**0**	**0**			**Hail(0.75)**
Dodge County									
Burnett	**03**	**1458CST**			**0**	**0**			**Hail(0.75)**
Rock County									
4 E Milton to 4 E Emerald Grove	**03**	**1600CST**			**0**	**0**		**25K**	**Hail(1.00)**
Green County									
Monticello	**03**	**1747CST**			**0**	**0**			**Hail(0.75)**

Remnants of the upper level low-pressure system that passed through the first of the month brought a secondary surface wave into the southeast part of the state, sparking the development of thunderstorms, some of which produced severe weather. Hail struck several cities throughout the southeast part of the state, and reached up to 1.00" in diameter in Merton (Waukesha Co). East of Milton (Rock Co.) the hail covered the ground while damaging some crops. Heavy rains of 2" to 4" fell across parts of Dodge, Washington, Jefferson, Racine, Kenosha, and Milwaukee counties leading to problems with ponding water or urban-type flooding. Water depths on roads in West Bend reached 3 feet, resulting in stalled cars. Some large trees were downed by strong thunderstorm winds that reached up to an estimated 52 knots (60 mph) in scattered locations. Lightning struck a garage and started a fire in Greenfield (Waukesha Co.), leaving aproximately $5K in damage, primarily to the SUV parked inside.

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

Iowa County

3 NE Edmund	**20**	**1820CST**			**0**	**0**			**Thunderstorm Wind (EG56)**

Sauk County

2.5 SSW Lake Delton	**20**	**1920CST**			**0**	**0**			**Thunderstorm Wind (EG52)**

Columbia County

Wisconsin Dells	**20**	**1930CST**			**0**	**0**			**Thunderstorm Wind (EG52)**

Marquette County

4.8 SE Endeavor to 6 ENE Montello	**20**	**1949CST**			**0**	**0**			**Thunderstorm Wind (MG52)**

Green Lake County

2.1 WSW Marquette	**20**	**2005CST**			**0**	**0**			**Thunderstorm Wind (EG56)**

A cold front moving across the south-central part of the state into a moist, unstable airmass triggered thunderstorms the evening of the 20th. Powerful, gusty winds topped out at an estimated 56 knots (65 mph), knocking down trees in the cities of Edmund (Iowa Co.) and Marquette (Green Lake Co.), as well as at Mirror State Park (Sauk Co.) and Wisconsin Dells (Columbia Co.). Damage at these locations consisted of toppled trees and power-lines. Electrical power was out for about 2 hours in Wisconsin Dells

Racine County

Kansasville	**25**	**1901CST**			**0**	**0**			**Hail(0.75)**

Kenosha County

1.5 S Paris to 1.6 NW Pleasant Prairie	**25**	**1910CST 1916CST**			**0**	**0**			**Hail(1.00)**

Up to 1.00" diameter hail fell just south of Paris (Kenosha Co.).

Sauk County

Lake Delton	**28**	**1850CST 2000CST**			**0**	**0**			**Heavy Rain**

Sauk County

Lake Delton	**28**	**1850CST**			**0**	**0**			**Thunderstorm Wind (EG50)**

Columbia County

9 E Wisconsin Dells	**28**	**1910CST**			**0**	**0**			**Thunderstorm Wind (EG52)**

Marquette County

3 NE Briggsville	**28**	**1915CST**			**0**	**0**			**Hail(0.75)**

Sauk County

2 WSW Reedsburg to 2 N Rock Spgs	**28**	**1920CST 1930CST**			**0**	**0**	**2K**		**Thunderstorm Wind (EG56)**

Severe weather developed as a surface trough trailing a surface low pushed through the state, and warm, moist air fed into the developing convection. Winds gusted up to 56 knots (65 mph) at Reedsburg (Sauk Co.), knocking down trees, as well as power lines; in one specific case, onto a barn. Scattered hail reports reached up to 0.75" in diameter, and rainfall rates reached 1-2" an hour.

National Weather Service
Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

WIZ046>047-051>052-056>060-062>072 **Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

01 0000CST 0 0 Drought
30 2359CST

Drought conditions continued from August, 2003, through September 2003, across south-central and southeast Wisconsin. Much of this area was in a severe drought (D2) status during the first part of the month, however, beneficial rains fell during the period of September 12-14. Rainfalls of 3 to 5 inches from Lafayette County to Green Lake County (with a small area of 6 inches in southwest Iowa County and northwest Lafayette County) were enough to lower the drought rating from severe to moderate (D1) in this area. However, monthly rainfall totals of about 2 inches or less were recorded near Lake Michigan, which allowed the drought rating over southeast Wisconsin to remain at severe. The monthly rainfall at Madison's (Dane Co.) Truax Field was 4.24 inches, or 1.16 above normal. This was only the 3rd month of the entire year to date that had above normal rainfall. The other two months (May and July) were barely above normal in the rainfall department. At Milwaukee's (Milwaukee Co.) Mitchell Field, only 1.65 inches of rain fell during September, 2003, or 1.65 inches below normal. May, 2003 was the only month to date in 2003 with above normal rainfall at Milwaukee (0.59 inch above normal). Water levels in lakes, rivers, and streams remained below normal for the entire month, although they briefly rose on September 13th and 14th in response to the rains. Newspaper reports indicated that corn yields were expected to be in the 70 to 100 bushels per acre range, compared to a normal of 130 to 140. Soybean yields were expected to range from 20 to 30 bushels per acre, about 50% of normal. In fact, some farmers were not expecting to harvest much of anything in October. Some parts of south-central and southeast Wisconsin have only received half of their normal precipitation from November, 2002 through September, 2003. However, some spotty locations in 2003 have managed to pick up enough rain to have near average crop yields. Some farmers felt that the drought in 2003 was perhaps as bad as the 1988 drought, or worse, and that one would have to go back to 1933 to find a summer as dry as the 2003 summer. Throughout south-central and southeast Wisconsin, some trees continued to drop their leaves (without color) due to the continued dryness.

National Weather Service
Storm Data and Unusual Weather Phenomena

October 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

WIZ046>047-051>052-056>060-062>072 **Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

01 0000CST 0 0 Drought
31 2359CST

Drought conditions, which started in August, 2003, continued through the month of October 2003, across south-central and southeast Wisconsin. The entire area was in a moderate (D1) to severe drought (D2) status during the month of October. The monthly rainfall at Madison's (Dane Co.) Truax Field was 1.60 inches, or 0.58 below normal. At Milwaukee's (Milwaukee Co.) Mitchell Field, only 1.51 inches of rain fell during October, 2003, or 0.98 below normal. The Wisconsin Dells (Columbia Co.) area only picked up 0.98 inches for the entire month. Two isolated areas had slightly over 2.50 inches, one east of Watertown (Jefferson Co.), and the other just south of West Bend (Washington Co.). Otherwise most locations in south-central and southeast Wisconsin picked up 1.5 to 2.0 inches for the month; however, most of the rain fell on only a few days. At Madison, there were only 5 days with 0.10 inches or more, and Milwaukee only had 4 days. Water levels in lakes, rivers, and streams remained below normal for the entire month, and at some spots they were near record-low levels. Newspaper reports indicated that some farmers didn't harvest much of anything in October. In addition, some wetland basins had substantially or completely dried up, especially in Kenosha County. It was noted that soils in southeast Wisconsin were dry to a depth of 18 to 30 inches. Some parts of south-central and southeast Wisconsin have only received 45 to 50% of their normal precipitation from November, 2002 through October, 2003. However, some spotty locations in 2003 have managed to pick up enough rain to have near average crop yields. Some farmers felt that the drought in 2003 was perhaps as bad as the 1988 drought, or worse, and that one would have to go back to 1933 to find a growing season as dry as the 2003 season. Throughout south-central and southeast Wisconsin, some trees continued to drop their leaves (without color) due to the continued dryness.

National Weather Service
Storm Data and Unusual Weather Phenomena

November 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

WIZ046>047-051-051-056>060-062>072 **Marquette - Green Lake - Fond Du Lac - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

01 0000CST 0 0 Drought
30 2359CST

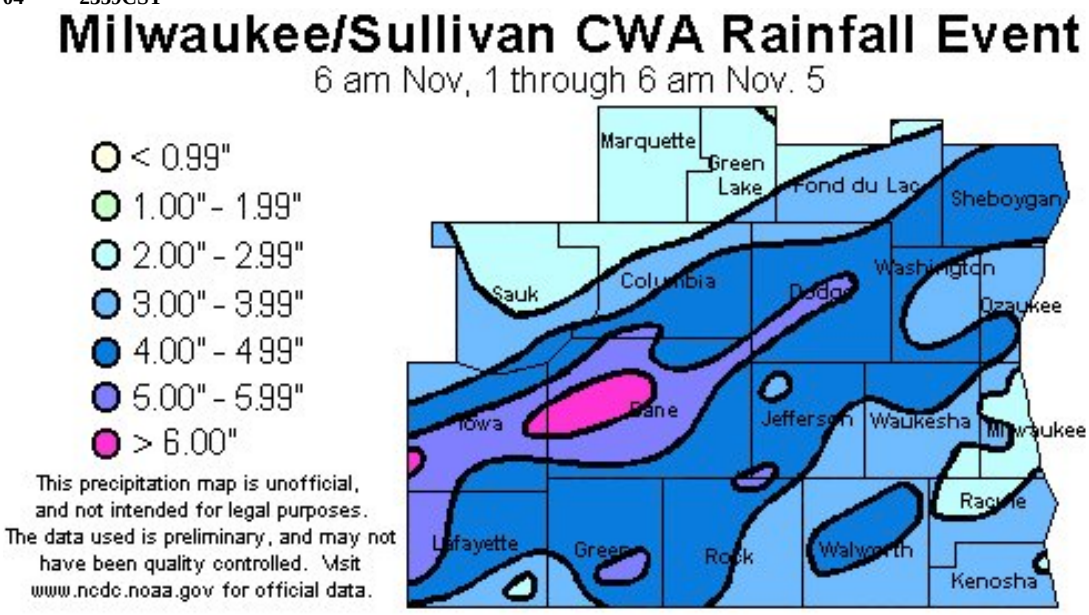
Drought conditions, which started in August, 2003, continued through the month of November, 2003, across south-central and southeast Wisconsin. At the start of the month, the entire area was in a moderate (D1) to severe drought (D2), however, widespread moderate to heavy rains during the period of November 1-4, resulted in an improvement to an abnormally dry (D0) to moderate (D1) drought status. The D0 area at the end of November, 2003, stretched from Lafayette and Green County through Dane to Marquette and Green Lake County. The remainder of south-central and southeast Wisconsin was in moderate (D1) drought status at the end of the month. Monthly rainfall amounts ranged from 3 inches in a small area of northern Milwaukee County to over 8 inches in parts of Lafayette, Iowa, Dane, Coumbia, and Green Lake Counties. The bulk of the montly rains fell during the first four days of November, 2003.

Columbia County									
Portage	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Dane County									
Madison	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Dodge County									
Beaver Dam	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Fond Du Lac County									
Fond Du Lac	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Green County									
Monroe	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Green Lake County									
Green Lake	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Iowa County									
Dodgeville	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Jefferson County									
Ft Atkinson	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Kenosha County									
Kenosha	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Lafayette County									
Darlington	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Marquette County									
Montello	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Milwaukee County									
Milwaukee	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Ozaukee County									
Port Washington	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**

National Weather Service
Storm Data and Unusual Weather Phenomena

November 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
WISCONSIN, Southeast									
Racine County									
Racine	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Rock County									
Janesville	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Sauk County									
Baraboo	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Sheboygan County									
Sheboygan	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Walworth County									
Elkhorn	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Washington County									
West Bend	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**
Waukesha County									
Waukesha	**01** **04**	**0000CST** **2359CST**			**0**	**0**			**Heavy Rain**



Widespread moderate to heavy rains across south-central and southeast Wisconsin during the period of November 1-4, resulted in an improvement to long-term drought conditions. Thunderstorms with locally heavy rain were noted on November 1st, 2nd, and 4th. Training of convective cells occurred on a line from southwestern Iowa County to the Middleton and Madison area in Dane County to the Juneau area in Dodge County. These corridor had rainfall totals of 5 to over 6 inches for the four-day period. Heavy rains during the pre-dawn hours on November 4th combined with leaf-clogged storm sewers to produce minor urban flooding in the cities of Madison, Sheboygan (Sheboygan Co.), and Milwaukee (Milwaukee Co.). These rains were primarily responsible for an improvement of moderate (D1) to severe (D2) drought conditions to abnormally dry (D0) to moderate (D1) conditions by the end of November, 2003. Three consecutive, daily, rainfall records were set at Madison on the 2nd, 3rd, and 4th, where the 4-day total was 5.09 inches. An unofficial 6.8 inches was measured for Nov 1-4, at a location a couple miles west of Middleton. The monthly rainfall at Madison's Truax Field was 7.49 inches, or 5.18 inches above normal. This was the 2nd wettest November on the books. The south-central counties experienced another round of decent rains on November 23rd, with Madison registering 1.70 inches. A monthly total of 8.11 inches was measured in the village of Mazomanie in northwest Dane County. Other scattered locations in Lafayette, Iowa, Dane, Columbia, and Green Lake Counties also had over 8 inches of precipitation for the month. At Milwaukee's Mitchell Field, 3.94 inches of rain fell during the month, or 1.24 inches above normal. Of this total, 3.59 inches fell during the first

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

four days of the month. In response to the rains on the first four days of the month, water levels in lakes, rivers, and streams rose from 25% to 50% of capacity to 75% to 90% of their bank-full levels by the end of the month.

WIZ046>047-051>052-056>060-062>063-065>068-071>072 **Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Waukesha - Milwaukee - Lafayette - Green - Racine - Kenosha**

12	**1200CST 2300CST**	**0**	**0**	**51.5K**		**Strong Wind (MG39)**	

Strong west to northwest, post-cold-frontal winds occurred over parts of south-central and southeast Wisconsin. Maximum wind gusts were generally in the 39 to 49 kts range (45 to 57 mph). Some large trees or large tree branches toppled onto some power lines, resulting in loss of commercial power for a couple hours. All counties had reports of downed power-lines. The gusts caused a construction crane to be pushed againt the wall of a hospital in Milwaukee (Milwaukee Co.), resulting in window and trim damage. In the city of Waukesha (Waukesha Co.), the gusty winds pushed a tree onto a home, resulting minor roof damage. At least 6200 customers in southeast Wisconsin lost electrical power, but there were no serious fires, injuries, or deaths.

WIZ064-069>070 **Jefferson - Rock - Walworth**

12	**1500CST 1900CST**	**0**	**0**	**10K**		**High Wind (MG56)**	

Powerful west to northwest, post-cold-frontal winds occurred over parts of south-central and southeast Wisconsin. Maximum wind gusts were 56 kts (65 mph) at Lake Beulah (Walworth Co.), which is near East Troy; 56 kts (64 mph) at a school in Milton (Rock Co.), which is part of Madison TV-15's WEATHERNET; and 53 kts (61 mph) on the southwest side of Watertown (Jefferson Co.). Some large trees or large tree branches were toppled onto some power lines, resulting in loss of commercial power for a couple hours. In Janesville (Rock Co.), a wind-toppled lage tree scraped a lot of paint off a vehicle. At least 6200 customers in southeast Wisconsin lost electrical power, but there were no serious fires, injuries, or deaths.

National Weather Service
Storm Data and Unusual Weather Phenomena

December 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm

WISCONSIN, Southeast

WIZ046>047-051>052-056>060-062>072 — **Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

01 09	**0000CST 2359CST**	**0**	**0**		**Drought**

Thanks to 1.5 to almost 2.5 inches of precipitation that fell on Dec 9th and 10, long-term drought conditions ended across south-central and southeast Wisconsin. The precipitation started as rain but switched over to snow on the 10th from west to east. The much-needed precipitation was associated with low pressure moving east across southern Wisconsin. An amateur radio operator near Delavan (Walworth Co.) had a two-day total of 2.49 inches. Milwaukee Mitchell Field (Milwaukee Co.) gathered 1.46 inches and Madison Truax Field (Dane Co.) came in with 1.66 inches. The drought conditions (at least D0 - abnormally dry) began on August 1, 2003. However, parts of south-central and southeast Wisconsin would go on to finish 2003 several inches below normal for yearly precipitation. Milwaukee only had 22.30 inches of precipitation in 2003 (normal is 34.81 inches) - the driest year since 1963 when only 19.10 inches was measured. Madison had 31.74 inches for 2003 (normal is 32.95 inches). In addition, much of south-central and southeast Wisconsin was 5 to 8 inches below normal in 2002 for yearly precipitation.

WIZ047-051-057>058-062>064-067>068 — **Green Lake - Fond Du Lac - Columbia - Dodge - Iowa - Dane - Jefferson - Lafayette - Green**

10	**0600CST 1900CST**	**0**	**0**		**Winter Weather/Mix**

Parts of south-central and southeast Wisconsin experienced the fringe effects of a heavy snow event that affected primarily central and northern Wisconsin. Two to four inches fell west of a Portage (Columbia Co.) to Madison (Dane Co.) to Brodhead (Green Co.) line, after several hours of rain. Lesser amounts fell east of this line. The precipitation change-over resulted in icy road conditions that led to dozens of vehicle accidents. The driver of a pickup truck was killed (indirect-related death) when their vehicle slid into another truck near Janesville (Rock Co.) at about 1830 CST. Several other drivers of vehicles involved in accidents needed medical treatment at local hospitals. This event was the first widespread, accumulating snow of the 2003-04 winter season, consequently drivers were traveling too fast for the conditions.

WIZ046-056 — **Marquette - Sauk**

10	**1500CST 1700CST**	**0**	**0**		**Heavy Snow**

A small part of south-central Wisconsin received 6 to 7 inches of snow by about 1500 CST in a marginal winter storm. Seven inches was measured at Montello (Marquette Co.), and Reedsburg (Sauk Co.). Accumulating snow started about 0400 CST, and was preceded by rain. Being that this was the first appreciable accumulating snow of the 2003-04 winter season, probably an estimated (based on newspaper reports) dozen or two dozen vehicle accidents occurred due to "driving to fast for conditions." Elsewhere in south-central Wisconsin two to four inches fell, and just 1 to 2 inches fell over southeast Wisconsin